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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,917	07/15/2003	Raminda U. Madurawe	ALTRP022D2	8946
22434	7590	12/17/2003	EXAMINER	
BEYER WEAVER & THOMAS LLP			PHAM, LY D	
P.O. BOX 778				
BERKELEY, CA 94704-0778			ART UNIT	PAPER NUMBER

2818

DATE MAILED: 12/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/620,917	<b>Applicant(s)</b> MADURAWA ET AL.	
	<b>Examiner</b> Ly D Pham	<b>Art Unit</b> 2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-19 and 2128 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-18 is/are rejected.
- 7) ☒ Claim(s) 19 and 21-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                     | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                            | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>0803</u> . | 6) <input type="checkbox"/> Other: _____                                    |

### DETAILED ACTION

1. Applicants' Preliminary Amendment filed July 15, 2003 has been entered. Claims 1 – 15, and 20 have been cancelled. New claims 21 – 28 have been added.
2. This office acknowledges receipt of the following items from the applicant:  
Information disclosure statement (IDS) was considered.
3. Claims 16 – 19 and 21 – 28 are presented for the examination.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (US Pat 6,525,591) in view of Roohparvar (US Pat 6,275,961 B1).

Regarding **claims 16 and 18**, Kato et al. disclose a method for evaluating an erase margin voltage in a single polysilicon EEPROM cell, the method comprising:

providing a memory circuit having an EEPROM cell having a control gate and an output node (fig. 4, nonvolatile memory cell having control gate CG/12 and output node drain D/15);

determining from signal on the output node when the margin (erase threshold) voltage has been reached by applying a voltages above about 0 volt (col. 15, lines 45 – 63).

Although Kato et al. did not clearly show the method step of sweeping the applied voltages to the control gate of the EEPROM cell, the feature is however shown by Roohparvar (col. 8, lines 9 – 17). Therefore, it is considered obvious to one of ordinary skill in the art, at the time the invention was made, to integrate the voltage sweeping method taught by Roohparvar to the disclosure by Kato et al. so that measurement of erase margin can be obtained with better accuracy.

Regarding **claim 17**, since Kato et al. showed that the erase threshold is above 0 volts, the method of claim 16 wherein the voltage being swept upward from 0 volts is considered inherent (see also in Kato fig. 20C, invention  $I_d$  versus  $V_g$  distribution in test).

#### *Allowable Subject Matter*

6. Claims 19 and 21 – 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior arts teach a method for evaluating an erase margin voltage of a nonvolatile memory cell as disclosed in claims 16 – 18, except:

The output node further comprises a sense amp connected to the cell by the drain line and a source line and the sense amp configured to detect margin voltages for the cell.

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The prior arts also fail to teach the memory circuit further comprises a margin test mode pull-up source device comprising two pull-up sources connected to the drain line, the margin test mode pull-up source device configured to produce an erase margin voltage of above 0 volt in the nonvolatile cell; and a sensor connected to the drain line configured to determined the erase margin voltage.

### *Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. When responding to the office action, Applicant(s) are advised to provide the examiner with the page and line numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

10. A shortened statutory period for response to this action is set to expire 3 (three) months and 0 (zero) day from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned (see MPEP 710.02(b)).

11. Any inquiry concerning this communication on earlier communications from the examiner should be directed to Ly Pham, whose telephone number is 703-305-4862, and will be 571-272-1793 as of 01/08/2004 due to the Office relocation. The examiner can normally be reached on Monday – Friday from 8:30am to 5:00pm, alternate Friday off. The examiner's

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supervisor, David Nelms, can be reached at 703-308-4910, **571-272-1787** as of 01/08/2004. The fax number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Ly Pham



December 12, 2003



**HOAI HO  
PRIMARY EXAMINER**